

A PROGRAM OF COMPENSATORY AFFECTIVE EDUCATION  
FOR CEREBRAL PALSIED ADOLESCENTS

**CENTRE FOR NEWFOUNDLAND STUDIES**

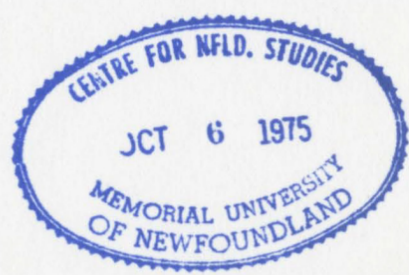
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A PROGRAM OF COMPENSATORY AFFECTIVE EDUCATION  
FOR CEREBRAL PALSIED ADOLESCENTS

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A Project Report  
Presented to  
the Faculty of Education  
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In-Partial Fulfillment  
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Master of Education

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by  
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## ABSTRACT

This project was undertaken in order to meet some of the needs of the students at a school for the cerebral palsied. The project was also an attempt to introduce to the teachers of the school some new approaches for dealing with the problems of cerebral palsied students.

The project report gives the reader an indication of some of the psychological and social needs of cerebral palsied and other physically handicapped children and suggests a number of methods that can be used to deal with these needs. The report focuses on two major problems of cerebral palsied children: that they lack many of the developmental experiences which are readily available to non-handicapped children, and they experience a number of environmental stresses in their early years. These problems rather than the condition of cerebral palsy itself, can lead to abnormal behavior as well as cognitive and affective retardation.

A remedial program for cerebral palsied adolescents carried out by the author is described in the report. The program used a small group activities approach and dealt with the following areas of affective education:

- 1 Sensory awareness, including body awareness,
- 2 Verbal and non-verbal communication,
- 3 Group interaction, and

#### 4 Relaxation training.

The teachers of the school were also involved in the program, both as participants in the activities and as group leaders.

The evaluation of the program indicated that about half of the students showed some improvement as a result of the program. The teachers' reactions to the program were very favorable and they indicated that they would use many of the techniques introduced in the program in their own classes.

The Self-Image Questionnaire developed by Deschin (1970) was administered before and after the program to see if the program had a positive influence on student self-image. The judges' ratings of the questionnaire were found to be highly unreliable and so further analysis of the results was not carried out.

The report indicates other problems faced by the students of the school, such as the need for values training and vocational counselling, which need further work or study.

## ACKNOWLEDGEMENTS

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## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS.....	iv
LIST OF TABLES.....	viii
Chapter	
1. INTRODUCTION.....	1
CEREBRAL PALSY: DEFINITION AND ETIOLOGY.....	1
STATEMENT OF PROBLEM.....	2
STATEMENT OF RELATED PROBLEMS.....	3
PURPOSE AND SIGNIFICANCE.....	4
2. REVIEW OF RELATED LITERATURE.....	6
APPROACHES TO THE BRAIN DAMAGED CHILD.....	6
THE EARLY EXPERIENCES OF THE CEREBRAL PALSIED CHILD.....	9
PSYCHOSOCIAL DEPRIVATION AND DEVELOPMENT.....	16
REMEDIAL PROGRAMS FOR CEREBRAL PALSIED CHILDREN.....	33
SUMMARY OF THE LITERATURE.....	42
3. BACKGROUND FOR PROJECT.....	44
DESCRIPTIONS OF STUDENTS.....	45
OBJECTIVES OF THE PROGRAM.....	54
DESCRIPTION OF THE PROGRAM.....	55
INVOLVEMENT OF THE TEACHERS.....	56

4. DETAILS OF THE PROGRAM.....	57
THE ACTIVITIES.....	57
THE SESSIONS.....	70
5. EVALUATION OF THE PROJECT.....	80
PROBLEMS IN EVALUATING THE PROGRAM.....	80
PROGRESS MADE BY STUDENTS IN THE PROGRAM.....	81
SELF-IMAGE QUESTIONNAIRE.....	85
TEACHERS' REACTIONS TO THE PROGRAM.....	86
REACTIONS TO INDIVIDUAL ACTIVITIES.....	88
OTHER OBSERVATIONS.....	88
SUMMARY.....	91
6. CONCLUSIONS AND RECOMMENDATIONS.....	93
CONCLUSIONS.....	93
RECOMMENDATIONS.....	95
SELECTED REFERENCES.....	97
APPENDIXES.....	106
A. Self-Image Questionnaire.....	106
B. Questionnaire for Teachers.....	107

# LIST OF TABLES

Table	Page
1. Students' Rankings of Eight Character Types from Least Objectionable to Most Objectionable.....	78
2. Scores on Self-Image Questionnaire.....	85
3. Summary Data of Judges' Ratings of Self-Image Questionnaire.....	86
4. Comparison of Students' Ages and Academic Standings with their Academic and Vocational Goals.....	90



## Chapter 1

### INTRODUCTION

A compensatory program in affective education was carried out with eleven students at a school for the cerebral palsied. The program included training for the students in sensory awareness, relaxation, verbal and non-verbal communication, and interpersonal skills. The program was carried out in April, May, and June of 1974. An evaluation of the project and a review of the relevant literature is included in this report.

### CEREBRAL PALSY: DEFINITION AND ETIOLOGY

Keats (1965) succinctly defined cerebral palsy as follows:

Cerebral palsy is a general term used to designate any paralysis, weakness, incoordination, or functional deviation of the motor-system resulting from an intracranial lesion. Since the brain is the center not only of muscular control but also of intelligence, behavior control, personality, and many other functions, it is possible for a brain injury to result in motor paralysis and or convulsions, mental deficiency, personality problems, or sensory defects such as loss of hearing, vision or sense of touch, depending on the location and the degree of involvement. The general physical symptoms may be far more obvious clinically than the mental, emotional and other associated handicaps. Thus cerebral palsy basically is a physical disability resulting from an intracranial lesion; such disability encompassing paralysis, weakness, incoordination, or functional deviation of the motor system (p.6).

However, cerebral palsy does not include conditions in which a progressive lesion is present.

Keats, in the same publication, gave a comprehensive list of the possible causes of cerebral palsy:

- I. Prenatal Factors
  - A. Hereditary Factors
  - B. Acquired During Gestation
    1. Irradiation
    2. Maternal Infection
    3. Prenatal Anoxia
    4. Hemorrhage During Pregnancy
    5. Foetal Cerebral Hemorrhage
    6. Kernicterus
    7. Prematurity
    8. Predisposition To Miscarriage
    9. Metabolic Disturbances During Pregnancy
    10. Maternal Toxemia
- II. Paranatal Causes of Cerebral Palsy
  - A. Mechanical Causes
    1. Prolonged Labor
    2. Mechanical Factors During Delivery
  - B. Foetal Asphyxia
    1. Mechanical Respiratory Obstruction
    2. Injudicious Use of Analgesics and Anaesthetics
- III. Postnatal Causes of Cerebral Palsy
  - A. Traumatic Injuries
  - B. Infections
  - C. Toxic Factors
  - D. Vascular Accidents
  - E. Cerebral Anoxia
  - F. Brain Tumors (pp.13-28)

Most authors would agree with Keats' definition and list of causes of cerebral palsy although few have spelled it out in such detail.

#### STATEMENT OF PROBLEM

The project was based on a number of the developmental needs of cerebral palsied children as indicated in the literature and as observed at the cerebral palsy school.

It should be noted that many of these needs apply equally to other types of physically handicapped children and many of the methods used in the program described in this report apply to the developmental needs of all children, whether or not they are physically handicapped.

The problem with which the project dealt, may be stated as follows: children with a motor handicap, in this case cerebral palsy, tend to be less mobile in their early years than their non-handicapped peers. Because of this, they tend to lack many experiences which are easily available to non-handicapped children. This lack of many typical experiences is reflected in retarded cognitive and affective development.

#### STATEMENT OF RELATED PROBLEMS

In any short term project, there is the problem of continuation and follow up. In order to insure continuation of the work done in this project, it was necessary to involve the teachers so that they could continue using the methods introduced in the program. The teachers seemed to be doing an excellent job in working with the children on cognitive development but it appeared that little attention was being paid to the affective needs of the children. Therefore, the teachers needed to be convinced of the desirability of a program of affective education in such a way that was not threatening but yet was interesting to them.

## PURPOSE AND SIGNIFICANCE OF THE PROJECT

The project had several purposes:

1. To meet some of the affective needs of the students at the cerebral palsy school. These needs were inferred from observations made by the teachers at the school and from personal observations by the author. These observations are described in detail under the section, "Background for Project". The list of needs is also supported by the review of the literature.
2. To investigate whether various techniques of affective education which had been tried with non-handicapped children could be applied to physically handicapped children with the same success.
3. To demonstrate to the teachers a number of methods of dealing with affective needs in order that the teachers would be encouraged to introduce these techniques into their teaching.
4. To indicate the types of curriculum changes that should be made.

It was believed that the results of this project could also make a contribution to the general field of educational psychology. The project report gives teachers and counsellors an indication of some of the psychological and social needs of cerebral palsied and other physically handicapped children. The following sections of the report

suggest a number of methods that can be used to deal with these needs. Many of these methods could also be applied to other types of students, such as the mentally retarded, the culturally disadvantaged, and/or reticent students.

## Chapter 2

### REVIEW OF RELATED LITERATURE

Before considering the problems of a person with a physical handicap, it is worth noting the following comment by Wright (1960):

... a physically disabled person is also a physically abled person. There are things that he can do as well as things that he cannot do...it is precisely the perception of a person with a physical disability as a physically disabled person that has reduced all his life to the disability aspects of his physique (pp.7-8).

However, there are many physically handicapped persons who show a multiplicity of symptoms, complications, and problems associated with, but not necessarily having the same etiology as, the primary handicap. This chapter is a review of the relevant literature on the problems associated with the lack of normal developmental experiences which often accompanies a physical handicap such as cerebral palsy.

### APPROACHES TO THE BRAIN DAMAGED CHILD

In the case of brain damaged children with motor disorders, there is a long list of symptoms associated with the "brain damage". Rappaport (1966) listed the following symptoms for the diagnosis of "brain damage":

#### I. Inadequate Impulse Control or Regulation

- A. Hyperactivity
- B. Hyperdistractibility
- C. Disinhibition
- D. Impulsivity
- E. Perseveration
- F. Lability of Affect
- G. Motor Dysfunctions
- II. Inadequate Integrative Functions
  - A. Perceptual Difficulties
  - B. Conceptual Difficulties
- III. Defective Self-Concept and Narcissistic Hypersensitivity
  - A. Low Frustration Tolerance
  - B. Flight From Challenge
  - C. Overcompensation
  - D. Control and Manipulation of Others
  - E. Negativism or Power Struggle (pp.39-40)

Rappaport saw these symptoms as problems of ego development and stated, "...when insult occurs to the brain...the integrity of the organism is interfered with, and this in turn is reflected in some type of disruption of the development of the child's ego (p.38)."

A number of other writers hold a different view. Barker, Wright, Meyerson and Conick (1953) stated that the relationship between physique and behavior is "mediated by the psychological situation, which physique helps to create in its role as a tool and as a social stimulus (p.67)."

Pond (1960) believed that apart from the symptoms that arose directly from the loss of brain function, chronic disorders following brain damage were largely the result of mis-handling of the child by parents and society generally.

Brereton (1972) took a middle position on the relationship between brain damage and apparent symptoms:

In some children it is of course true that there is brain-injury at intellectual levels and this is the entire explanation of their learning ability and

behaviour. In others it seems reasonable to believe that impaired learning ability and behaviour that appears abnormal, occur as the result of secondary difficulties in visual and visuo-motor skills which result from the motor handicap itself. They may not result from brain-injury at intellectual levels (p.4).

Many authors have pointed out that there is no direct relationship between the degree of disability and behavior or personality. Barker et al. (1953) said that, according to the research reports, persons with cerebral palsy did not exhibit common characteristics of behavior or personality. Furthermore, they stated that "there is no evidence of an appreciable relationship between degree of physical impairment and extent of personality disorganization (p.65)." Edwards, Alley and Snider (1971) contended that signs of minimal brain dysfunction did not have a direct relationship to the reading achievement of the subjects they tested. Brereton (1972) found that the growth of cerebral palsied children was subject to more variables than that of normal children but she also noted that on the tests used "many unusual responses are made by children without cerebral palsy.(p.18)." Therefore, unusual responses on a particular test do not necessarily indicate the presence of brain damage.

Although few people would deny the importance of congenital factors and hereditary endowment, it would seem that a neurological explanation will not account for all the variations in the behavior and personality of the brain damaged child. The emphasis should be on a neurodevelop-



mental approach where such influences as child rearing, environmental stresses, stigma, and deprivation complement the neurological explanation. A corollary of the neurodevelopmental view is the instituting of an interdisciplinary team approach to the development of the brain damaged child. Such a team might include physical therapists, medical personnel, occupational therapists, teachers, counsellors, and child psychologists.

According to Cashdan (1966), one of the child psychologist's tasks is that of exploring the relationship between particular rearing and teaching practises and the subsequent development of the child. The child psychologist could also assist in diagnosing the child's developmental difficulties and working with the rest of the team in developing and evaluating new programs for the child.

#### THE EARLY EXPERIENCES OF THE CEREBRAL PALSIED CHILD

As Pringle (1965) has pointed out, cerebral palsied children have the same needs as all children:

1. The need for love and security.
2. The need for new experiences.
3. The need for recognition and achievement.
4. The need for responsibility (p.52).

Cerebral palsied children and other physically handicapped children are often "at risk" in meeting all of these basic human needs. This is because "a spastic child has a different environment from a normal child and his experience is inevitably limited because of his handicap

(Whatley, 1966.p.49)." Brereton (1972) also emphasized this point:

In the case of cerebral palsied children, the environmental factor may play an exaggerated role. In treating the physical handicap, one has to allow for the absence of information (for example about balance) because of the overall inadequacy of the child's experience. It is necessary also to allow for the presence of faulty developmental sequences arising from attempts at interaction. These are themselves an environmental variant (p.6).

There are a number of prominent environmental stresses which are commonly present during the early years of a cerebral palsied child which are not ordinarily present in the early years of a normal child. Environmental stresses may be present in the following areas: " the initial parent child relationship...the relationship between the child and the objective world around him...levels of aspiration and success at school...lack of verbal communication...hospitalization...the physical handicap itself as a continuing pressure...institutionalization (Brereton, 1972, pp. 50-53)."

The major deficits in the development of the cerebral palsied and other physically handicapped children may be summarized under the following headings: 1 Sensory Deprivation, 2 Social Deprivation, and 3 Problems with Parents.

### Sensory Deprivation

Cerebral palsied and other physically handicapped children often lack many of the sensory experiences

available to the "normal" child in the early years of life. A deficit in sensory input can occur in several ways. The sensory loss may be directly associated with brain damage as Keats (1965) noted:

The sensory loss may be in the nature of a cortical defect, since learning difficulties which some children experience are suggestive of the sensory and perceptual difficulties associated with parietal lobe damage (pp.323-324).

However, it may be that the child has the ability to process sensory information but lacks the opportunities for sensory experiences. Gulliford (1965) commented that a great many handicapped children have had only limited opportunities for the informal learning which comes through childhood play; many have had very little social contact with other children; in addition, many have had a rather limited experience of the natural and human environment. Berko (1966) pointed out that for the cerebral palsied child, "the formative years have been spent as an observer, rather than as a participant in life, and frequently the child is not given the opportunity even to observe the activities common to his age level (pp.265-266)." Because of this, he approaches school age as an academic retardate because he has an experiential deficit in those areas upon which the primary education is based. This lack of experiences may come about by lack of motor ability, parental overprotectiveness, or isolation and neglect caused by stigma. Even when the cerebral palsied child has a range of sensory experiences available to him.

they are not usually accompanied by normal motor experiences and so the child may be faced with problems of sensory-motor integration. Brereton (1972) stated:

Many cerebral palsied children are relatively later learning to walk than in acquiring a degree of hand-eye co-ordination. Normal children learn quite a lot from handling objects at two to three years of age, as toddlers, and this information holds good at age 4½ to 5½ when they become much more precise in their interpretation of data. Cerebral palsied children who have reasonably good hand and head control have several problems. Some of their eye-hand movements are learnt from a sitting position at two and a half to three and a half years. They then start walking and obtain a different set of eye-hand relationships and, harder still, the new set is based on information distorted by uncertain posture and uncontrolled movements (pp.7-8).

Bronfenbrenner (1968), cited in a study by the United States Department of Health, Education and Welfare (1968) made the hypothesis that if general stimulus deprivation was introduced in early infancy and continued into later stages, serious disturbances would result which could become permanently disabling if isolation was maintained through both middle and later infancy. The evidence for this proposition will be examined in the section which deals with the developmental patterns of the cerebral palsied child.

#### Social Deprivation:

The physically handicapped child may be deprived of many social contacts which are readily available to his non-handicapped peers. This may come about because of hospitalization or institutionalization, because of parents

who "hide him away": either from overprotectiveness or from being ashamed of having a handicapped child, and/or because of stigma which can lead to social avoidance.

A number of authors (Deschin, 1970; Harway, 1962; Kinnane and Suziedelis, 1964; Wigglesworth, 1966) discussed the problems of physically handicapped children interacting with non-physically handicapped children. For example, Wigglesworth (1966) said:

Perhaps the handicapped child is deprived most of all of early contact with his peers. If he has contact with other children at all in the early years, the chances are that although they may be the same age, they will be his superiors in physical and/or mental ability. This can be a damaging experience, especially when it is combined with the additional deprivation of experience in exploring the environment or suitable play material (p.1).

Not only might the physically handicapped person feel inferior in a social group, but he might also have to endure people wanting to "help" as well as those who are curious, or sympathetic (Barker et al., 1953). He may not be given responsibilities because of his handicap, and this lessens the opportunities for recognition and achievement. He might even be made to feel that he is a burden on others. Wright (1960) summarized the negative effects of stigma:

...a physical attribute may become handicapping not because it is physically limiting but because it adversely affects social relationships... Physical limitations per se may produce suffering and frustration, but the limitations imposed by the evaluative attitudes toward physique cut far deeper and spread far wider; they affect the person's feelings about himself as a whole. One of man's basic strivings is for acceptance by the group, for being important in the lives of others and for having

others count positively in his life (pp.10,14).

### Problems with Parents

If a child is to develop normally, he should experience a "warm, intimate and continuous relationship with his mother, a relationship in which both find satisfaction and enjoyment (Bowlby, 1953, p.11)." There are many factors in the early life of the cerebral palsied child which conspire to deprive both the child and his mother of this relationship.

According to Wilson (1970), the arrival of a handicapped child can be a severe shock to parents which McDonald (1962) believed was the result of disappointment over unfulfilled expectations. Keats (1965) agreed:

No parent wants to have a handicapped child born in the family. How often has it been said by expectant parents: "All that I really ask for is a normal, healthy child." The degree of a handicap is a measure of the extent to which a child will fulfill the hopes of the parent. When the disability is severe, there is the probability of failure in all important areas (p.287).

The attitudes of parents toward children who have a disability tend to be extreme. Several things may happen after the parents have experienced the initial shock and disappointment caused by the birth of their handicapped child. In particular, parents tend to show the following patterns in excess: oversolicitude, rejection, pressurizing, and inconsistency (Wright, 1960). According to Wigglesworth (1966), the most common reaction by mothers is usually overprotection. There is a danger that the mother may

become too deeply involved with her handicapped child and develop an almost physiological state called hyperpaedophilia. Wigglesworth defined this as follows:

In simple terms, this means that the mother remains unnaturally deeply attached to her handicapped, helpless and baby-like child in the same sort of way that the normal good mother is attached to her completely helpless and dependent newborn infant. The danger of this to the handicapped child is that he is not helped to grow up and gain experience of the world on his own therefore remains immature (p.1).

Whatley (1966) also commented on the immaturity which seemed common among cerebral palsy children and, like Wigglesworth, believed that it was often caused by overprotective parents. She concluded "both 'positive' and 'negative' parents can make excessive or unrealistic demands on a child (p.49)."

The cerebral palsied child may have a particular problem in relation to the initial mother-child contact. The normal suckling infant is very well placed for engaging in eye-to-eye contact with his nurse. However, Brereton (1972) noted that this is not always the case for the cerebral palsied child:

Think now of the cerebral palsied infant and you will realize it may, by force of circumstance, such as prolonged tube feeding, fixation in asymmetrical tonic neck reflex position, inability to sit up, etc., fail to make eye contact with its mother's face, and for this reason alone be deprived of the initial source of information (p.7).

Partly because of his parents' reaction and partly because of his physical inability to cooperate, the cerebral palsied child is particularly vulnerable to

maternal and paternal deprivation.

Finally, although the parents of a handicapped child may love him and care for him, they may be worried about what other people might think, and feel embarrassed to be seen with their handicapped child in public (McDonald, 1962).

#### PSYCHOSOCIAL DEPRIVATION AND DEVELOPMENT

The conditions of sensory restriction, social deprivation and problems with parents all add up to a general condition referred to by some authors (Caldwell, 1973; Jessor and Richardson, 1968) as "psychosocial deprivation". In a real sense, handicapped children are among the "culturally disadvantaged". Television has improved the situation but cannot substitute for first hand experience. Watching television is basically a passive experience and the content of television may give a distorted or erroneous sense of reality.

#### The Evolution of the Deprivation Model

The concept of psychosocial deprivation and its consequences has evolved from a number of sources. The oldest sources are those thinkers who emphasized the importance of early experience on the development of personality. Hunt (1967) cited the following example of interest in early experience found in ancient Greek history:

...in Plutarch's LIVES, Lycurgus, the Law Giver of



the Spartans, took puppies from the same litter and reared them in diverse ways, so that some became greedy and mischievous curs while others became followers of the scent and hunters. He exhibited these pups before his contemporaries, saying, "Men of Sparta, of a truth, habit and training and teaching and guidance in living are a great influence toward engendering excellence, and I will make this evident to you at once." Thereupon he produced the dogs with diverse rearing (p.269).

The modern idea of the importance of early experience initially came from Freud (1905) and his theory of psychosexual development. Much of the current interest in early experience stems from the work of Piaget and his associates (Piaget and Inhelder, 1969) who believed that the growth of intelligence was dependent on sensorimotor experience and operations on the environment.

The importance of early experience, and by implication, deprivation during early childhood, has its roots as an experimental question in the studies of imprinting by the ethologists, Lorenz (1937), Tinbergen (1951) and later Hess (1959). Related to the concept of imprinting is the critical period hypothesis discussed by many authors (Caldwell, 1968; Denenberg, 1968; McGraw, 1946; Scott, 1968).

The theory of Hebb (1949) led to a number of studies based on sensory deprivation and/or sensory enrichment. Most of these studies were done using animals, usually dogs or rats.

Perhaps following the footsteps of Rousseau (1762), who prescribed that the child, Emile, should very early be exposed to pain and cold that he might be toughened, a

number of researchers have studied the effects of noxious stimulation given early in life. Recent studies (Denenberg, 1962; Goldman, 1964; Levine, 1960; Salama and Hunt, 1964) have suggested that early painful stimulation may have positive effects. The findings indicated that both noxious and pleasant stimulation in early infancy was associated with decreased emotionality and increased growth in adult rats. One could draw the conclusion from this work that the worst possible case for an infant would be lack of stimulation.

Early studies on the lack of stimulation in early childhood (Bowlby, 1952; Goldfarb, 1955; Ribble, 1943; Spitz, 1945) concentrated on the concept of "maternal deprivation", and indicated that institutionally reared children had more psychological problems than home reared children. However, because of such critics as Pinneau (1951) and Casler (1961) and the work of such researchers as Rheingold and Bayley (1959) and Harlow (1968) the concept of "maternal deprivation" has been revised in favor of a more general concept of deprivation.

Related to the concept of maternal deprivation, various studies of child rearing practises (Davis and Havighurst, 1946; Williams and Scott, 1953) examined the differences between lower class and middle class early family environments and suggested that the lower class child was perhaps more comfortable in terms of parental permissiveness than the middle class child. However, a

study by Maccoby and Gibbs (1954) suggested just the reverse pattern. With the publication of Riesman's (1962) book on "cultural" deprivation, the "concept of maternal deprivation as an independent variable was broadened to take in the entire social-cultural domain (Caldwell, 1973,p.21)."

In summary, several types of deprivation in early childhood have been suggested in the literature. These include sensory deprivation, maternal deprivation, social deprivation, and cultural deprivation. In most cases it was reported that most or all of these conditions existed together and all referred to a general lack of stimulation. As discussed in the previous section, cerebral palsied children, and other physically handicapped children, often suffer from a similar lack of stimulation in their early years. Brereton (1972) summarized it well when she stated:

The presence of a motor handicap from birth could well disorganize development in many ways. It could be that cerebral palsy children fail to interact well with their environment because of a basic lack of facility in apprehending information, but it could also be that their failure depends on inadequacies in the information available to them or to the erratic nature of the information with which their brain is furnished (p.9).

#### Psychosocial Deprivation and Behavior

In reviewing a number of animal studies, Brereton (1972) stated, "...one can readily draw attention to experiments where deliberate deprivation of interaction produces behaviour strikingly similar to that of some cerebral palsied children...(p.8)." Before reviewing these

studies, the following caution by Mogenson (1972) is in order:

It is necessary, however, to be cautious in generalizing from findings in lower animals to human beings. Animals have much simpler nervous systems and their social environment and organism-environment interactions differ considerably from those of children (p.139).

However, because of methodological considerations, many types of early experience studies with children are unfeasible. Therefore there would appear to be a good deal to be gained from early experience studies with animals in spite of the criticisms and cautions reported above.

Thompson and Heron (1954) compared the behavior of dogs raised in isolation chambers for several months after weaning with their litter mates who were raised as pets. Upon release the isolated dogs were hyperactive, had a sensory motor disturbance, and were markedly weaker in problem solving. Thompson and Heron described the deficit as "a lack of ability to discriminate relevant from irrelevant aspects of the environment, or to adapt to changes made in the experimental situation (p.29)." In a more recent isolation experiment with beagles, Melzack (1965) confirmed most of the earlier findings. Forgas (1954) carried out a similar type of experiment using three groups of rats as subjects. His first group was in a large, black-painted cage with toys. The second group could only see the toys and the third group had no toys at all. When tested later, the first two groups moved around faster, were

less emotional and frightened, showed much more varied behavior, and were better at problem solving. Held and Hein (1968) placed kittens, initially raised in the dark, into a special carousel car. One kitten was able to walk about whereas the other was carried in the carousel. In later tests the kitten that had the passive visual encounter with the environment showed a number of behavioral deficits. The authors concluded that "self-produced movement with its concurrent visual feedback is necessary for the development of visually-guided behavior (p.368)." Mogenson (1972) summarized these and other studies and concluded:

...there is a good deal of evidence that a reduction in the total amount of sensory stimulation or even in the variety of sensory experience in early life can influence later behaviour. Although gross histological changes are absent there are changes in perception, problem-solving, social behaviour, etc., indicative of subtle physiological effects on the nervous system (p.141).

Lindsley and Riesen (1968) agree with Mogenson and stated that "...an impoverished sensory environment results in the arrest of behavioral development, in retarded biological development, and in an anatomical and physiological changes in the nervous system (p.251)."

#### Psychosocial Deprivation and Cognitive Development

Many of the studies of the relationship between deprivation and cognitive development follow from Hebb's (1949) theory that stimulation facilitates the development

of cell assemblies and phase sequences in the brain. According to the theory, these structures then serve as mediating processes that enable the organism more readily to process subsequent sensory input.

Rosenzweig (1968) reported that enriched experience leads to anatomical and chemical changes in the brains of rats and mice. Animals in the enriched environment consistently developed greater weight of cerebral cortex than did their impoverished litter mates. Rosenzweig said that "changes in the brain induced by experience underlie the changes in learning ability brought about by experience (p.131)." Recent studies such as those by Schapiro and Bukovich (1970) and Volkmar and Greenough (1972) have added to the evidence that an enriched environment increases growth in the brain.

Increased growth through enrichment also takes place in the sensory systems. Lindsley and Riesen (1968) reported that:

visual, auditory, olfactory, and vestibular sensory systems all share a common response to an optimum level stimulation. Cell diameters increase, RNA concentration increases, and in some instances - where measurements have been taken - there is a change in thickness and weight of the layers of retina or cortex (p.253).

March (1973) reported that a period of sensory stimulation increased the ability of fourth and sixth grade children to learn a language task. In a review of various studies, Mogenson (1972) summarized the effects of restriction or deprivation and enrichment on cognitive and

intellectual processes. He found that:

maze learning and problem-solving performance are seriously disrupted following total visual deprivation and inferior following restriction of environmental experience. On the other hand, performance in such tasks is enhanced following enriched environmental experience. Motivational and emotionality changes contribute to the behavioral deficits as well as perceptual, cognitive and intellectual effects (p.152).

These studies have special implications for the cerebral palsied child. For example, Brereton (1972) commented:

In the case of cerebral palsied children, the environmental factor may play an exaggerated role in relation to intellectual development. These children are likely, in many ways, to be "at risk" in their opportunity to acquire experience by interaction with their environment. Added to this is the likelihood that the physical handicap will cause distortions of experience. Added to this again is the likelihood that attempts to cope with this distorted experience will themselves produce faults in the sequence of intellectual development (p.6).

Before teaching the cerebral palsied child, a school should make an evaluation of his experiential development and "any gaps in this process of normal experiential development should be corrected prior to, or concurrent with standard curriculum (Berko, 1960, p.266)."

#### Psychosocial Deprivation and Affective Development

Not only can psychosocial deprivation affect behavior and cognitive development, but it can also influence the way the deprived person feels about the world and the way he interacts with others.

The development of verbal communication. The

importance of early experiences in the development of language was clearly established in the literature. Church (1961) emphasized the importance of pre-verbal experiences on language development. Sinclair (1971), using Piaget's theory, argued that sensorimotor patterns are prerequisites for the development of language. Neal (1972) reviewed a number of studies which indicated that the effects of environmental deprivation on speech and language development can be significant.

The child with a physical handicap is deprived of much of the day to day experience of other children. A lack of experience is reflected in the retarded speech development of physically handicapped children. According to Byrne (1962), studies have indicated that speech and language develop slowly among athetoid and spastic children. However, it should be noted that though retarded, "acquisition of language and articulatory skill follows the same sequential pattern observed in normal children (p.521)."

Children learn about words through experiencing the quality or the object which the words describe. It cannot be taken for granted that physically handicapped children, because of their lack of experience, understand clearly the meaning of simple descriptive words even if they use the words when they speak. Sheeran (1965) told an interesting story which illustrated this point:

Several years ago a very heavily handicapped pupil asked me during an arithmetic lesson what was really



meant by "heavier". Because of his great handicap, he had literally been carried around from childhood and all physical tasks had, of necessity been carried out by others on his behalf. I gathered he had only handled a pencil or pen - his hands were very deformed, and was not at all clear of the meaning of weight, nor was he conscious of it. This boy was an exception but I soon found out that although many of the others were conscious of weight, they had very little idea of magnitude or relative weights of objects. The pupils were then introduced to a set of kitchen weights. If they were not capable of holding them, then the weights were fastened to their hands. This discovery made me wonder how much of the knowledge we take for granted in the normal 11 plus child, must not be taken for granted when dealing with pupils who have had an irregular education (p.106)

The ability to speak has a direct effect on self-concept. Phillips, Butt and Metzger (1974) felt that "communication and identity are inextricably bound up in one another (p.211)." Donovan (1965) affirmed this when she stated:

Speech is important to the psychological development of a human being because it is a normal means of self-expression as well as a means of relating to other people. Serious impairment in the ability to communicate orally is a frequent cause of personality disorders and emotional problems (p.4).

Donovan added that effective speech is basic to education, to social mobility and vocational competence. The ability to express oneself effectively is a social asset to any person and greatly enlarges his control over the world around him. For the physically handicapped, good oral communication can bring the recognition and achievement he so badly needs and can partly compensate for his disability. Speech is the easiest and most accepted method of self-expression and is the key to social and

interpersonal skills. Ram (1965) emphasized the importance of oral communication to the physically handicapped when he commented:

To the children with whom we deal, shut up in their inadequate bodies and cut off from so many forms of self expression, some vehicle for the exchange of thought and feeling with their fellows is a necessity of life (p.127).

Trombly (1968), in writing about language and the cerebral palsied child, stated that language is most easily learned at moments when the child reacts, or can be made to react to some specific experience. Because of lack of experience, a language development program for the cerebral palsied child should include sensory awareness activities. The purpose of these activities for children is "to enlarge their vocabulary through talking and explaining about the objects (Lowndes, 1970, p.36)." Mecham (1966) agreed with Lowndes and felt that:

because of the cerebral palsy child's limitations in exploring and getting around, much of the environment which is normally encountered must be brought to him and made meaningful for him in terms of language and experience (p.101).

The development of interpersonal competence. Jessor and Richardson (1968) outlined the relationship between psychosocial deprivation and the development of interpersonal competence. They reported that:

a recurrent theme in this review of social and emotional factors in psycho-social deprivation is the importance for the individual of feeling he has some degree of control of his social environment. An important skill, then, in participating in society is the ability to influence others' thoughts, feelings, and

actions - to shape the responsive treatment received from others... An important set of interpersonal skills related to influencing others are those required for social interaction, particularly for establishing and maintaining identities in relation to others (p.40).

Lack of practise in interpersonal skills may come about because of either lack of social contact or lack of opportunity to take on social roles. Jessor and Richardson (1968) stated that "extensive experience and cognitive growth are necessary to deal effectively with social relationships and maintain flexibility in the complex and rapidly changing social conditions of today (p.35)." For a person with a physical handicap, effective social role development becomes very difficult. Nemarich and Velleman (1969) who summarized twelve years of test results with handicapped children found that:

...this group of children, as a whole, shows a greater tendency toward a more personalized, introspective view of life than able bodied children. They experience difficulty in facing social situations generally, especially situations which may imply guilt or personal inadequacy (p.2).

The relationship between isolation and abnormal social behavior has been confirmed by a number of animal studies. Harlow (1968) and Mason (1968) tested the behavior of monkeys raised as social isolates and Thompson and Heron (1954) described several experiments with dogs. Mogensen (1972) summarized the results of these experiments:

Restriction causes retardation in social development of dogs and monkeys. Following isolation dogs are "puppy-like" and submissive in certain social situations. Following maternal deprivation monkeys show atypical social behavior, the most striking abnormalities being associated with sexual behavior (p.153).

An interesting point is that the tendency for a physically handicapped person to be a social isolate may be greater for a person with a mild disability than for one with a severe disability. Although Wright (1960) stated that there is little relationship between the degree of adjustment and the degree of disability, she also postulated that a person with a mild disability may, because he is almost normal, have a greater push to hide and deny his disability, thereby thwarting his own adjustment. A person whose disability is so severe as to be undeniable has little recourse but to grapple with the problem of accepting himself as a person with a disability. Results of a study by Zahn (1969) supported this hypothesis.

The development of self-concept. It is important that the physically handicapped person have a strong self-concept and high self-esteem. Jessor and Richardson's (1968) discussion of the consequences of low self-esteem is quoted below:

While the destructive consequences can be considered at length even a brief listing indicates the pervasive social, personal and vocational harm resulting from negative attitudes towards oneself. Thus we find that persons with low self-esteem tend to be socially withdrawn and apprehensive, inclined to reject their own perceptions and judgment and accept those of other persons, and lacking the social skills and ease that make for friendships and social participation. They are likely to be self-conscious and preoccupied with their own deficiencies and overwhelmed with feelings of helplessness and hopelessness. Such feelings are expressed in higher levels of anxiety, higher levels of (psychosomatic) symptoms and reduced effectiveness in performing academic and vocational tasks. Lacking trust in their capacities and anticipating failure, they are

inclined to be cautious in their explanations, limited in the risks they will assume, and quick to cease their efforts. Convinced that their powers are too limited to have a favorable influence upon their future lives, they tend to lose hope and adopt a pessimistic and fatalistic view towards the failures and unhappiness that presumably await them (p.28).

Pringle (1965) stated, "...how a child feels about himself and his handicap is a much more potent factor in determining his personal and social adjustment than the nature or even degree of the handicap (p.58)."

A physically handicapped person has a number of problems in developing high self-esteem. Wright (1960) pointed out that "arbitrarily holding up 'normal' performance as the model of behavior unnecessarily commits many persons with a disability to repeated feelings of failure and inferiority (p.25)." In some cases, a physically handicapped person cannot get into the normal group but does not want to be associated with the handicapped group. Wright (1960) discussed this type of reaction:

It is the social reality of an undesirable personal characteristic, awareness of it on the part of others, that threatens one's group status. To attempt to hide, to deny, to forget is common sense although it does not make adjustive sense. It does not make adjustive sense because acceptance of a disability requires that the person absorb it within his psychological outlook in such a way that it is no longer a painful fact that must be concealed (p.22).

Body-image plays an important role in the development of the self-concept of the physically handicapped child. Cruikshank, Bentzen, Ratzeburg and Tannhauser (1961) contended that a poor body-image can

influence both the learning and the adjustment of a handicapped child. They reported:

...brain injured children often are characterized by inadequately developed concepts of the body image. Such impairment has also been found to be responsible for the development of inadequate self-concepts in brain injured children...until a child has developed a relatively good concept of the body image, his own self concept will be significantly impaired and learning of all types will be significantly retarded. The development of a realistic body-image concept necessitates co-ordinated physical growth and sound emotional development, i.e., a generally secure person. If any of these facets of healthy growth are retarded for any reason, the individual's body image may be impaired, and learning and adjustment will be retarded as a result (p.8).

Langden and Stout (1951) studied well-adjusted handicapped children and discovered that, despite tremendous differences in the background and physical characteristics of these children, there was one outstanding similarity. The children were loved by their parents in an atmosphere of warm, though not necessarily demonstrative acceptance. Wright (1960) cited experimental support for the following propositions: 1 There is a positive relationship between self-acceptance and acceptance of others, and 2 there is a positive relationship between self-acceptance and the acceptance a child perceives from others. However, it may be that, for the physically handicapped person, social devaluation must come before self-acceptance. Wright (1960) stated:

...we cannot say that frequency or intensity of social devaluation is related in a direct or one-to-one way to personal feelings of inferiority. With increase in social devaluation may come an increased need for a new look into one's values, which, as an important first

step in the process of adjustment may do much to counteract the destructive power of inferior social status (p.54).

Emotional and motivational development, Bowlby (1958)

has suggested that in addition to the sensory and learning capacities of the young infant, certain experiences may be related to the extent to which affectional bonds are developed between mother and child. Certain behaviors such as sucking, clinging and following elicit emotional responses in the mother. The mother is drawn to and becomes attached to her infant. The cerebral palsied child, because of his motor handicap, may not be able to carry out these typical behaviors. Jessor and Richardson (1968) further elaborated on the development of the affectional bonds:

The conditions necessary for the development of early attachments, as best we know them, include contact with an adult(s) who provides sensory stimulation to the child, who is responsive to the infant's needs, and who provides this responsiveness with some regularity in relation to the child's own overtures. Parental neglect-either in the form of too little stimulation or stimulation that is not contingent with respect to the child's own actions-has been quite consistently indicated as an antecedent of weak development of the affectional system in young children. It is probably not of crucial importance whether a mother or a mother surrogate provides the stimulation. Rather, it is the lack of appropriate stimulation - ordinarily given the child through talking to him, touching him and cuddling him, when he is awake and receptive to this stimulation-which is crucial (p.14).

Mogenson (1972) agreed with the above authors that "tactile stimulation is important in emotional development and in the attachment to the mother which is the basis of subsequent

socialization (p.152). "Montagu (1971) in his book, Touching, stated:

It appears probable that for human beings tactile stimulation is of fundamental consequence for the development of healthy emotional or affectional relationships, that "licking", in its actual and in its figurative sense, and love are closely connected; in short, that one learns to love not by instruction but by being loved. As Professor Harry Harlow has put it, from the "intimate attachment of the child to the mother, multiple learned and generalized affectional responses are formed" (p.35).

The problems that a cerebral palsy child may have with the initial parent-child relationships have been discussed previously. It would be expected from this that many of these children might show retarded emotional development. Ingram (1965) confirmed this when he reported that:

Experience of the problems of young adults suffering from cerebral palsy suggests that many school leavers are rather over-educated, but that emotionally they are very immature, very unrealistic about their handicaps and have the greatest difficulty in forming satisfactory personal relationships either at work or in their leisure hours (p.4).

Hunt (1965) believed that motivation is based on informational interaction of an active "expectant" organism with its environment. The relative inability of cerebral palsied children to explore and experience their environment may affect the development of motivation. The constraints on a physically handicapped child can be frustrating and discouraging. Cruikshank (1972) noted that physically normal persons often have barriers to accomplishing their goals but unlike the physically handicapped, they can move freely around in their environment.



and often change these barriers; and they are not faced with the same barrier in every problem situation.

Moral development. Although moral development is a more difficult area to evaluate, Jessor and Richardson (1968) reported that:

To a considerable extent moral behavior is determined by the same abilities that determine effective cognitive performance and school achievement. The implication is that the same conditions which cause poor learning and poor achievement in psycho-socially deprived children also cause retardation in morally relevant "ego strength" traits. In that sense there is nothing specific to the area of moral development (pp.32-33).

Jessor and Richardson also linked maturity of moral judgment to deficiencies in "role-taking opportunities".

Kay (1970) in his review of moral development stated:

...since the arrival of "readiness" depends upon previous experience...[one] must see that children are given every opportunity to be involved in preparatory experiences. They must be prepared for understanding weight by weighing as many things as possible...for understanding morality by being involved in moral situations (p.250).

In view of the other deficiencies caused by lack of experience, it is possible that cerebral palsied children may also be deficient in moral development.

#### REMEDIAL PROGRAMS FOR CEREBRAL PALSIED CHILDREN

The previous discussion showed that the cerebral palsied child is not only faced with his physical handicap but also must often suffer environmental understimulation which can lead to problems in a number of developmental areas.

Bowley and Gardner (1959) stated the task of the teacher or therapist in remediation:

The effects of limited experience, if allowed to continue over many years, can be profound, and the task of parents and teachers and therapists is the urgent one, as far as the very handicapped young child is concerned, of providing maximum stimulation at the right level, of bringing stimulation to the child in situations where he cannot reach out for it, as early as possible (p.9).

### Critical Periods

Any person setting up a remedial program must contend with the implications of the "critical period hypothesis". The particular implication which concerns the therapist is that his program may have little or no results because the critical period has passed when such stimulation would have been effective.

The phenomena of critical periods has been investigated by Lorenz (1937) and Hess (1959) in their work with imprinting in geese. McGraw (1946) demonstrated critical periods in the acquisition of motor skills in human infants. Scott (1962), working with dogs, differentiated three main types of critical periods: for learning, for establishing social relationships, and for infantile stimulation. In the many sensory deprivation experiments (Harlow, 1968; Held and Hein, 1968; Nizzen, Chow and Sens, 1951) critical periods have been demonstrated, although not precisely measured.

A number of writers have taken issue with a strict critical period hypothesis. Denenberg (1968) questioned the fixed time interval concept of the critical period and favored

the "maximum susceptibility" position. Caldwell (1968) emphasized the importance of studying critical underlying events rather than critical time periods. In relation to psychosocial deprivation, Jessor and Richardson (1968) stated, "There is no evidence that the debilitating effects produced by early deprivation of the type encountered in institutions are irreversible (p.58)." Woods (1959), in a study of problem-solving behavior in rats, concluded, "The results clearly indicate that the effects of early sensory and motor deprivation can be markedly reduced by subsequent exposure to an enriched environment (p.401)."

The therapist running a remedial program must take the position that, although there is an optimal time when learning should take place, a remedial program can have some positive effect at a later date. Caldwell (1968) paraphrased Orwell and proposed that "all periods are critical, only some are probably more critical than others (p.222)."

Designing a remedial program. Ideally, a program for cerebral palsied children should involve the family as well as the school. McDaniel (1969) found that family support in terms of active interest, acceptance and encouragement bore a definitely significant relationship to the patient's response to rehabilitation.

In designing a program, it is important to remember that most of the developmental principles which apply to "normal" children also apply to cerebral palsied children.

Elvin (1966) brought out this point as follows:

...some of the difficulties of spastic children are that they are in homes which by their very physical structure no more permit some excellent practises to be followed than they do for their unhandicapped brothers and sisters (p.i).

Most children who have cerebral palsy are multiply handicapped. Each child in a group of cerebral palsied children is different and therefore any program must be individualized to take into account each child's needs, deficiencies, and abilities. Due to different degrees of physical disability and/or different environmental backgrounds, various children within one group may be at several different developmental levels. Berko (1966) proposed the use of the following checklist:

1. Is the activity within the child's developmental level of performance?
2. Does the child comprehend what is required of him?
3. Is the learning situation itself in proper structure?
4. Has the child been prepared for change when change in structure or situation is necessary?
5. What is the relationship between the child and the teacher or therapist?
6. How does the special education teacher, the clinician who teaches cerebral palsied children in a group, allow for these individual differences (p.274)?

#### Programs Other Than Those For The Cerebral Palsied

There are a large number of intervention programs which attempt to counteract the effects of psychosocial deprivation caused by poverty. Many of these were reviewed by Ryan (1972). The types of programs which Ryan studied, included:

- I. Stimulation through home tutoring of parents.
- II. Stimulation through group programs.
- III. Infant Day Care Programs
- IV. Parent education.
- V. Language oriented pre-school programs.
- VI. Special projects such as Head Start.
- VII. Prenatal nutrition programs
- VIII. Short term stimulation of institutionalized infants.
- IX. Kindergarten for four year olds.
- X. Programs for native peoples (pp. 173-214)

A number of programs have attempted to enrich the experience of the mentally retarded. Kirk (1958) studied eighty-one mentally retarded pre-school children over a period of three to five years. The children comprised four groups as follows: an experimental group from the community who attended an enriched nursery school, a control group from the community, an institutionalized experimental group who had the same nursery school experience as the community experimental group, and an institutionalized control group. Both the community and institutional experimental groups improved their intelligence and social quotients to a significantly greater extent than did the control groups, and retained these initial gains in the follow up period. This study demonstrated that enriched nursery school experiences can be beneficial to overcoming some of the effects of deprivation experienced by the mentally retarded child.

A thirty year longitudinal study by Skeels (1966) involving thirteen mentally retarded children showed similar results. When the children were still under three years of age, they were transferred from an orphanage to an

institution for the mentally retarded in which they experienced a one-to-one relationship with an adult who was generous with love and affection, and the children received an abundance of attention and experiential stimulation from a variety of sources. They were compared with a group of children, initially higher in intelligence than the experimental group, who were left behind in the orphanage. After two years, the children in the experimental group showed an average gain of 28.5 I.Q. points. The children in the control group showed an average loss of 26.2 I.Q. points. A follow up survey, twenty one years later, showed that of those in the original experimental group, none were dwelling in an institution. In the control group, one of the subjects had died in adolescence and the remaining subjects were still wards of institutions of various kinds. The children of the experimental group had completed an average of twelfth grade. The control group completed an average of less than third grade. All thirteen of the children in the experimental group were self supporting or married and functioning as housewives. In the control group, only one subject attained an occupation level above that of unskilled labor.

Kreger (1971) described a compensatory environment in a large institution for the severely mentally retarded. The program was instituted when it was realized that "the severely retarded can and do become bored with the environment in which they live (p.30)." By altering

utilization of living space to reduce congestion and by increasing the availability of varieties of sensory stimulation, the staff was able to eliminate a number of severe behavioral problems, such as stereotypic behavior and self-abuse, which had existed previously.

Of special interest to those attempting enrichment programs for disadvantaged children are the contributions of Maria Montessori (see Gitter, 1970). Montessori's methods individualized instruction for each child as her methods were based upon the spontaneous interests of children in learning. She used mixed groupings of three to six year olds which gave the younger children a variety of novel models for imitation while supplying the older children with an opportunity to teach. Montessori emphasized training of the sensory processes in early education.

#### Programs For The Cerebral Palsied

Cruikshank et al. (1961) set up an experimental program for forty brain-injured children which incorporated four basic principles: 1 the reduction of environmental space, 2 the reduction of non-essential visual and auditory environmental stimuli, 3 the establishment of a highly structured daily program, and 4 the increase in the stimulus value of the instructional materials themselves. Results of a multitude of tests indicated that there were no statistically significant differences in academic achievement between those in the experimental group and a

control group. In fact, both groups of children showed statistically significant improvement during the follow up year. Meyer (1968) commented on the program as follows:

Perhaps the major question that can be reasonably asked, in spite of the methodological problems, is whether or not the data lend support to the general hypothesis that a minimal stimulation classroom is significantly beneficial for the education of "brain injured" children. A careful consideration of all the data fails to provide a convincing case for the hypothesis (p.207).

In general, the philosophy of most developers of programs for the cerebral palsied agree with Wilson (1970) who said:

The experience is that quite a few children with cerebral palsy need to be taught to see and to listen. It would seem that they also need to be taught to develop awareness (p.15).

Wilson described such a program:

The late Madame Albertreccis, when dealing with a hemiplegic child stressed the need for the child to be made aware of his own body, through touch as well as sight. She encouraged the child to extend and touch his paralysed limb, saying "my shoulder", "my arm", "my wrist", "my hand", "my fingers", thus bringing into his cognition a limb he scarcely knew he possessed. Similarly the child must be allowed to feel the surfaces around him - hard, soft, rough, smooth, hot, cold, wet and dry, thus developing his sensory paths, almost like a blind child. These experiences must be made possible for the cerebral palsied child at the age when a normal child would receive them and they must be pursued with great dilligence (p.9).

Bowley and Gardner (1969) wrote of a program used with young cerebral palsied children. The program consisted of (1) manipulation material, (2) locomotion, (3) creative activities, (4) imaginative play, and (5) group activities. Brereton (1972) described a similar program with children



from four and a half to six years old:

The skills considered were all non-verbal and involved touching, moving and feeling objects and relating the information to that which is acquired through vision. These, normal children acquire before or about the time they commence formal schooling. The level at which treatment is to be pitched is assessed by an occupational therapist. The programme of testing is supervised by a psychologist (p.23).

Brereton and Ironside (1972) outlined a program for severely handicapped cerebral palsied children who could not speak. The program was based on interaction games and demonstrated that even these children could benefit greatly from an enriched and stimulating environment.

Mecham (1966) believed that relaxation training should be incorporated into any program for the cerebral palsied. Methods of relaxation described by Mecham included:

- I. Progressive Muscle Relaxation.
- II. Semantic Relaxation as developed by Korzybski.
- III. Suggestive Relaxation.
- IV. Listening to Music.
- V. Laughing.
- VI. Bathing in Warm Water.
- VII. Willfully becoming as limp as possible.
- VIII. Sun Bathing.
- IX. Massaging.
- X. Relaxing Games.
- XI. Using comfortable furniture such as sandbags.
- XII. Drugs.
- XIII. Relaxation as a result of successful achievement of a goal.

A program of sensory awareness for cerebral palsied children need not take place only at a certain hour in the day. It can and should be ongoing all the time, both at home and at school. Mecham (1966) cited suggestions made by Huber for building up a world of experiences around the

cerebral palsied child. He stated that one should:

teach your child to notice more things every day by means of the senses of sight, hearing, touch, smell and taste. If he must remain seated a great part of the time, place him where there is something worth looking at. Even a tiny baby, if propped up comfortably on pillows where he can see some action going on, will be content for longer periods of time than if left lying on his back or stomach during his waking hours... If mother is working in the kitchen, wheel him in there so that he can watch her work and she can talk to him about what she is doing, smile at him often and perhaps sing to him now and then. Take him to the windows frequently and point out to him the changes in the sky, the weather, the trees, plants, anything new that has appeared on the landscape. If the weather is good let him sit outdoors for long hours and tell him what to observe; if he is an older child you might get him a pair of binoculars so that he can bring the world of birds, trees, flowers and animals closer... Teach Jimmy to listen for and to understand the sounds occurring about him... The sense of touch is another important avenue of experience for the very young child (p.101-102).

#### SUMMARY OF THE LITERATURE

A survey of the literature indicated that there is no direct relationship between the degree of brain damage and psychological and social problems experienced by the cerebral palsied child. The literature demonstrated that environmental factors play a large role in the degree of adjustment and achievement of the handicapped person. There are a number of environmental stresses commonly experienced by the handicapped child in his early years which can lead to a degree of psychosocial deprivation. This deprivation can lead to abnormal behavior and cognitive and affective underdevelopment.

The issue of critical periods was discussed, and led

the writer to conclude that cerebral palsied children must be reached at as young an age as possible. Since there are many different degrees and types of handicaps, each program must be individualized to some extent and conducted at the level at which the child is functioning.

The various remedial programs discussed indicate that sensory awareness is a prerequisite for other types of learning.

## Chapter 3

### BACKGROUND FOR PROJECT

In order to design a group program, some selection of students was necessary. The students in the program were selected according to the following criteria:

- 1 They did not have a speech impairment which would seriously affect their ability to communicate orally with the other participants.

- 2 They were at least ten years of age.

- 3 They were judged by their teachers as being able to benefit from the program.

The students in the school who were not selected to participate in the program engaged in an alternate school activity run by the teachers.

Although each of the students met the above criteria, they formed a divergent group. Some of the students were able to walk without mechanical aids, some used crutches, and two students who had muscular dystrophy were in wheelchairs. Some of the students lived in institutions, while others lived with their families. A few of the students also had a background of poverty. The students demonstrated a wide range of abilities, interests and needs. This chapter describes the students and the program.

DESCRIPTIONS OF STUDENTS

At a meeting with the teachers, the author recorded detailed descriptions of the students. The descriptions were as follows:

Student A

Student A, a seventeen year old male, was highly verbal but slow in most academic areas. He was doing Grade five math and was reading at a low Grade three level.

Student A was worried about his place in society and had a poor self-concept. He had a record of poor attendance in school. He often said what he thought you wanted him to say and constantly quoted his father.

Student A needed to develop a measure of independence and to realize that he was almost an adult. He needed feedback concerning how others perceived him. Although he was overly verbal, he needed to increase his vocabulary and, in addition, he needed to learn to listen to other people.

Student B

Student B, a fourteen year old female, was a capable girl with a good sense of humour, who appeared able to cope in society one day. She had perceptual problems and her work was often erratic, but her Grade four math and reading were both progressing. She showed insight in her

work and could draw inferences. She would tackle problems without needing explanations. On the other hand, she sometimes became moody and unsure of herself, which might have been due to many problems. She was conservative and limited in her attitudes, and needed to be exposed to new experiences. She had a nice singing and speaking voice and could give good dramatic interpretations. Student B needed an enrichment program, more self confidence, and practise at social skills. She needed to go out on a limb to try new things. She had leadership skills which needed to be developed.

#### Student C

Student C, a fifteen year old male, had muscular dystrophy and therefore had very restricted mobility. He was in a wheelchair and was often withdrawn, but had been more cheerful around the time the program began. He responded well to friendly teasing and being made to feel a part of things. Other children sometimes called him "Ironside" in deference to his intelligence. His chair had recent adaptations to support his back but it was not comfortable and he tired easily.

Student C said that he could "read all day"; he had a Grade eight reader and liked stories about real events. However, he did not read at home. He worked at Grade six math very competently and was almost ready for Grade seven math. His hobbies were watching hockey and playing chess.

Student C needed stimulation through some type of enrichment program. He needed someone to read to him and with him, and to take him on expeditions. He badly needed someone to confide in. He spoke very softly and needed to increase the volume of his voice. He needed to learn to express his feelings and to speak out more freely.

#### Student D

Student D, a fourteen year old female, was a very pleasant girl who appeared in most respects, to be a normal fourteen year old. Her handicap, mainly a visual-motor dysfunction and memory loss, was caused by an illness two or three years ago. She was making considerable progress in many areas, for example, her spatial orientation, her motor coordination, and her immediate memory. She could dictate fluently into a tape recorder and had learned to swim. She was learning letters with difficulty and found it almost impossible to associate sounds with them. She had nearly finished Grade one math. She could not distinguish between red and green, or red and orange. She had learned about fifteen sight words since September and could write her name from memory. She was developing a real talent for drawing and had done some beautiful needlework. She was good with younger children and her ambition was to be a nurse.

Student D needed at least one hour a day of intensive coaching in her weak areas. She needed many

experiences of all kinds to assist in developing her memory. Using narration and oral testing methods, she needed exploration of at least one subject at a fairly advanced level.

Student D was very quiet and needed to speak up. She needed to increase her vocabulary and to learn to express her feelings.

#### Student E

Student E, a fifteen year old female, had a mature personality and was a "little mother" to the other children at a local residential institution. Her desire to be with her own family was often expressed in her compositions. She was making progress in her Grade four math and reading. She had shown a sensitivity and fondness for poetry. She was very quick at working with her hands. She had musical ability and sang well. She easily became despondent, but was learning how to cope with small failures.

Student E needed most of all, a home. She needed encouragement and training to become independent. She needed experience with the world outside, particularly in social situations. She needed to improve her vocabulary.

#### Student F

Student F, a fourteen year old female, had made little academic progress during the year and apparently had accomplished little the previous year. Although she read orally at the Grade four level, her other language skills



were below this. She was having difficulty with math at the Grade two level, especially with problem solving.

Previous psychological testing had indicated that Student F fell barely into the educable mentally retarded range.

Socially, she got along well with her school mates. Although not an outgoing person, she was a willing helper with the younger children.

Student F needed an education with practical emphasis. She was often withdrawn with strangers, perhaps because of a poor self-concept. She would not give her opinion easily and needed to learn to speak up. She needed to increase her vocabulary.

#### Student G

Student G, age twelve, was the brother of Student C and like his brother had muscular dystrophy. Student G had near normal intelligence but was limited in his physical ability. He was doing well at the Grade four level, but perhaps could have done better if he had tried harder. He showed indifference to the craft program; he was willing but not enthusiastic. Although fond of woodwork, Student G said he would have preferred a variety of academic subjects, including French and science. He was interested in sports and although limited physically, he participated willingly and enthusiastically to the best of his ability.

Although he was not outgoing in the classroom, Student G could be quite verbal at lunch and recess periods.

He joined in many activities.

Student G needed more academic work in a variety of subjects, with less emphasis on crafts. He spoke in a low voice and needed to increase his volume. He needed to learn more words and to be encouraged to give his opinions more often.

Student H

Student H, a thirteen year old female, was doing quite well at school despite a late beginning. During the year she had completed Grade one math and was well into the Grade two program. Although she was slow and uncooperative at first, she had developed confidence in her reading and was working at the Grade one level.

Student H enjoyed and excelled in crafts, cooking and swimming. Although she tried, she often had difficulty in getting along with the others. Through her efforts to be helpful, she was often domineering. However, her efforts were often helpful and were appreciated by the teachers. On rare occasions, she would take out her frustrations by hitting out at other children and by throwing a temper tantrum.

Student H needed a continued academic program, accompanied by a great deal of praise and encouragement, to boost her self-confidence. She needed to learn to give others a chance before taking over everything. Her vocabulary was low and her speech was difficult to understand, but she was receiving speech therapy.

Student I

Student I, a twelve year old male, was progressing well at the Grade four level. He had high verbal ability. His learning difficulties seemed to stem from a diagnosed perceptual disturbance. Although enthusiastic about his school work, he did not show any interest in the craft program. In fact, he disliked crafts and saw them as unimportant in "real" school life.

Socially, Student I got along equally well with younger and older children. He was cooperative and considerate.

Student I needed a continued academic program with allowances made for his perceptual difficulties and high distractibility. He seemed fairly tense and needed to learn to relax. He also needed to increase his vocabulary.

Student J

Student J, a fourteen year old male, was the twin brother of Student K. Often appearing very serious and worried, Student J was the brighter of the two twins. Academically, he was doing very well at the Grade four level. Although he liked rug hooking, he indicated that he would have liked to have had a more varied academic school program which would include geography, science, and sports. Although he was more realistic than his brother, Student J lacked a strong self-concept. He was easily influenced by others and lacked a variety of "real" experiences; he was

greatly influenced by television. Student J got along well with most of the students but preferred the company of the older boys. He needed a continued academic program with emphasis on practical aspects and new experiences. He needed to learn to relax and to increase his vocabulary.

#### Student K

Student K, a fourteen year old male, was the twin brother of Student J. Student K was progressing well at the Grade four level. He was doing particularly well in math. He was very imaginative and had a flair for creative writing.

However, Student K was lacking in a strong self-concept and he accepted at face value what other people said. For example, he still believed in Santa Claus. The twins usually dressed alike and their mother picked out their clothes. Student K had difficulty in sorting out the "real" world from the "make-believe". He was highly influenced by television which he watched on an average of five hours a day.

Student K was outgoing, mixing equally well with boys and girls. He was fond of crafts, especially rug hooking and would have liked more woodworking. He needed a continued academic program with emphasis placed on practical applications and new experiences. Student K needed to learn to listen, demonstrated by his totally irrelevant statements often made during a discussion. He also needed to learn to

relax.

### Observations Made at the School

In October and November, 1973, the author conducted five two-hour counselling sessions with the older boys at the school. From these sessions, a list of problems and concerns which affected the students was compiled. On March 20, 1974, a meeting was held with the teachers at the school concerning the project. From these two sources, a list of some general observations which could be made about the students at the school was derived.

1 The students seemed to lack first-hand experience with the world outside. The students seemed to have gained most of their experience of the real world through television.

2 The students seemed immature for their age, both in their interests and their speech.

3 Most of the students lacked the ability to listen to others.

4 Many of the students were reticent and were lacking in self-confidence.

5 A few students were overly verbal and used this to gain a larger share of attention from the teachers.

6 The students seemed to have difficulty working and interacting as a group. There was a great deal of chaos when the students were required to organize themselves for a large group activity.

7 The students seemed to have difficulty relating to each other, to the teachers, or to persons outside the school on a personal or, in some cases, a social basis.

#### OBJECTIVES OF THE PROGRAM

Although it was recognized that the individual needs of each student were somewhat different, a set of general objectives was drawn up for the program based on the observations made at the school.

The behavioral objectives of the program were adapted from the Taxonomy of Educational Objectives: The Affective Domain by Krathwohl, Bloom and Masia (1964) and from Communication in Education by Phillips, Butt, and Metzger (1974). The objectives of the program were:

I. Awareness: The students should become aware of themselves and the world around them.

A. They should develop a knowledge of the material world through their senses.

B. They should become aware of the qualities of other people around them.

C. They should become aware of their bodies.

D. They should become aware of their feelings.

II. Receiving: The students should be able to receive communications from other people.

A. They should be able to receive and interpret verbal messages from other people.

B. They should be able to receive and interpret

non-verbal messages from other people.

III. Responding: The students should be able to effectively express themselves to others.

A. They should feel the need to speak.

B. They should have a large enough vocabulary to express themselves effectively.

C. They should learn to express their feelings and personal experiences in appropriate ways.

D. They should be able to interact in a group.

E. They should be able to communicate with their teachers, parents and other adults.

IV. Valuing: The students should hold opinions on a number of issues and be able to express those opinions.

A. They should become aware that there are many positions which can be taken on an issue.

#### DESCRIPTION OF THE PROGRAM

The program consisted of twenty sessions spread over seven weeks; each session was about one and a half hours in duration. The program used a small group activities approach and dealt with four main areas: 1 sensory awareness, including body awareness, 2 verbal and non-verbal communication, 3 group interaction, and 4 relaxation.

Effective group interaction and relaxation were emphasized throughout the program and thus were an incidental part of the training. During the twenty sessions,

roughly equal time was spent in the areas of sensory awareness, and verbal and non-verbal communication.

The sessions were held in a large room, either with everyone seated in a circle, or with the students divided into small groups of three to five participants.

#### INVOLVEMENT OF THE TEACHERS

In order to demonstrate the techniques in the program, the author asked the teachers to join with the students as participants in the activities. There were many advantages in this method of introducing the activities to the teachers. The teachers were able to experience the activities first hand, they were able to observe how each activity was carried out, and they could observe the effects of the activities on the students. This method seemed the best way to prepare the teachers to use the activities in their own classes in the future.

In addition, a number of meetings were held during the project to discuss the progress which was being made by the students. The teachers also assisted in the evaluation of the program.



## Chapter 4

### DETAILS OF THE PROGRAM

The program consisted of a large number of a large number of activities presented to the students in twenty sessions. This chapter is a detailed description of the activities and the sessions.

### THE ACTIVITIES

Following is a detailed description of the activities used in the program. They are arranged in alphabetical order according to the title of the activity. The sequence in which the activities were used is described in the next section. Activities which do not have a reference were invented or adapted by the author for the program.

#### Animal Game

The purpose of this game was to teach awareness of sounds and to encourage vocalization of quiet students.

Candy or peanuts were placed around the room and the entire group was divided into equal parts, each group representing some animal. A captain was selected for each group and on signal the entire party attempted to find the candy or peanuts distributed about the room. Only the captains were allowed to pick up the candy. Captains were called by the different members of their group by using the

call of the animal which they represented (Edgren and Gruber, 1963).

### Back-to-back Conversation

The purpose of this activity was to teach active listening and to make the students aware of non-verbal communications.

The students were paired off, and were asked to sit back-to-back with their partners. Without turning around, they were to talk to their partners for one minute. The author then asked, "How did you feel about keeping up the conversation?" The group explored the need for non-verbal cues of interest to maintain a discussion (Alameda County School Department, 1969).

### Body Trip

The purpose of this activity was to teach body awareness and to encourage creative fantasy.

The author gave the following instructions to the group: "Relax as much as you can in your chair. Close your eyes and become aware of how you feel. Now shift your attention to your feet and, without moving them in any way, become conscious of what they are resting on or how they feel. Now become aware of each of your toes, the top of your feet, your ankles, calves, knees, thighs and buttocks, the chair that is supporting you, your stomach, chest and back, the back of the chair, your shoulders, arms, elbows, wrists, hands and each of your fingers, your neck, lips and cheeks,

nose, eyes, face, forehead, top of the head, back of the head; your entire body. Experience your breathing, the sounds in the room, and how you feel right now. Slowly open your eyes" (Gunther, 1973).

### Bouncing Ball

The purpose of this activity was to teach awareness of sound.

The author bounced a ball; the students closed their eyes and, when called on, a student told how many times the ball bounced. At first the ball was bounced only one, two or three times, then the number was increased to the level of difficulty the children could handle. Another variation was to change the speed while bouncing the ball (Witsen, 1967).

### Brainstorming

The purpose of brainstorming was to generate ideas and to encourage discussion and participation.

Brainstorming is a first step in planning, a way of getting out the greatest number of ideas to consider. The only rule is to spill out ideas as quickly as possible without criticism of any of the ideas. One person was appointed recorder for each group. Some topics which were used for brainstorming were:

- 1 the uses of some object such as a ruler, a necktie, or a tin can,

- 2 list opposites, for example the qualities of good or bad teachers, or opposite behaviors,

3. list questions you might like to ask someone, for example a policeman, a farmer or an astronaut (Mial and Jacobson, 1968).

### Chain Story

The purpose of this activity was to encourage students to participate in discussion in a group.

One student began a story and each student added a segment to the story (Alameda County School Department, 1969).

### Cover Up Eyes

The purpose was to teach the students to look at the person he is speaking to and at people who are speaking to him.

The students covered their eyes while they spoke to one another. They discussed how this made them feel and why (Alameda County School Department, 1969).

### Discussion Games

The purpose of these games was to encourage discussion. There were several variations used during the program.

1 The students role-played a situation in which three people tried every conceivable way to elicit the opinion of a fourth person. The fourth person refused to participate. The three students discussed how they felt when the fourth did not respond.

2 The students role-played a situation in which each student said things totally unrelated to what anyone else was saying. Everyone tried to talk at once. The students

then discussed the experience and its implications.

3 The students role-played a situation in which nothing each student said was related to what had previously been said. In other words, each student tried to change the topic to what he wanted to talk about. Also, the author answered questions of students with comments that had no bearing on what the student had asked. The group discussed this and decided on ways to improve the situation (Alameda County School Department, 1969).

#### Facial Expressions

The purpose of this exercise was to teach the effects of non-verbal communication.

The author read a list of moods to the students. The students made faces at each other to convey these moods. Examples of moods were "happy", "sad", "surprised", and "worried".

#### Feel Your Breathing

This activity was introduced to teach body awareness.

The students put their hands on their chests and stomachs to become aware of their breathing. They then became aware of the air coming in and out of their noses (Gunther, 1973).

#### Forced Choice

Forced choice is an activity designed to generate discussion and help students to examine their own values.

The students were divided into small groups. The groups were given a number of alternative choices and asked to rank order these choices according to their own values. The groups tried to reach a consensus and then were brought together into a large group to try to arrive at a common list for the entire group. Some examples of forced choice lists used were:

- 1 Rank order a list of occupations.
- 2 Rank order items which you would keep in a survival situation.
- 3 Rank order a list of different people when their characters have been specified (Simon, Howe, and Kirschenbaum 1972).

#### Getting In Trouble

This activity was introduced to teach the students to share personal information with others.

Each member of the group fantasized for a few minutes by remembering some situation in which "they got into trouble". They then shared their fantasy with a partner or the whole group. Other fantasies were remembered and shared with the group (Boressoff, 1972).

#### Grandmother's Trunk

The purpose of this game was to teach careful listening and to involve everyone in a group activity. It was useful as an "ice breaker".

The first person said, "In my Grandmother's trunk,

there is \_\_\_\_\_". The second person repeated the object that the first person had given and added his own. The game continued with each person adding another object (Boressoff, 1972).

### Hot and Cold

The purpose of this activity was to develop sensory awareness.

The students were presented with three trays containing hot, cold and lukewarm water. The students placed one hand in both the hot and the cold water and then placed both in the lukewarm water. The hand that was in the hot water felt cool and the hand that was in the cold water felt warm when placed in the lukewarm water.

### Interference

This exercise was designed to teach the students that one person should speak at a time, and that communication takes place only when there are active listeners. The exercise had two parts:

- 1 The author began a conversation with one of the students; when the student was speaking, the author turned and began a conversation with someone else. After a few seconds, he turned and asked the first student how he felt about this.

- 2 Two students had a conversation while sitting facing one another. Two other students were then placed between the two conversers and were asked to talk. Both

conversations were stopped after a couple of minutes and the first two were asked how they felt about their conversations when the two others were there; the two intruders were also asked how they felt about their role (Alameda County School Department, 1969).

### Key Game

The purpose of this game was to show the importance of the eyes in communication.

The subject of non-verbal communication was discussed with the group. The students formed a circle with six students showing hate and three students showing love with their eyes. The middle student of the three had a key and the student who was "it" had to find it by looking at the eyes of his fellows (Alameda County School Department, 1969).

### Mirroring

The purpose of mirroring is to develop body awareness. It can also be used as a warm up activity for role playing.

Each student stood facing another student. One student made a movement which the other copied, pretending he was the mirror reflection of the first student. Then they changed roles (Chesler and Fox, 1966).

### My Name Is... and I Want ...

This exercise is similar to "Grandmother's Trunk" and served the same purpose. It also enable the author to



to learn the names of the members of the group. The first person said, "My name is...and I want..." and the second person repeated the first person's name and desires and added his own (Boressoff, 1972).

#### Perceptual Memory Game

The purpose was to make the students aware that there were many common things which they perceived but did not remember.

The students were asked about things and people in their environment to see what details they could remember. Sample questions were: What color are your teacher's eyes? How many windows are there in the front of the school?

#### Personal Space

The following exercises were designed to teach the role of distance in social encounters.

1 Partners stood at opposite sides of the room and carried on a conversation. On signal, they gradually shortened the distance, while carrying on the conversation, until they were touching noses. The students discussed how they felt at the various distances.

2 Two students held a face-to-face conversation; one student suddenly moved forward. The group discussed the other student's reaction and he was asked how he felt when this happened. (Adapted from Hall, 1966).

#### Relaxation Exercises

The following methods were used to help the students to relax.

1 Systematic muscle relaxation. Different muscles in the body were tightened and relaxed in turn (Lazarus, undated).

2 Head Tapping. The students tapped each others heads, with the receiver having his eyes shut (Gunther, 1973).

3 Back Slapping. The students slapped each other on the back (Gunther, 1973).

4 Tighten Body. The students tensed their bodies and then relaxed completely.

### Role Playing

Role playing had a number of purposes: to practise social interactions; to understand the role of the other person; to improve interpersonal relations; to understand social problems.

The students acted out various situations and then discussed what happened (Chesler and Fox, 1966).

### Screaming

This exercise was used for relaxation, to encourage the students to vocalize, and for just plain fun.

The students yelled as loudly as possible. Usually this was done at the beginning of a session (Gunther, 1973).

### Sound Experiments

The students tightened and loosened a string of a

guitar and listened to the differences in pitch. The students observed the strings of a piano and a guitar and listened to the differences in pitch between a thick string and a thin string. A guitar string was loosened so that the students could observe the string vibrating. They could see that the wider the string vibrated, the greater the volume.

### Spontaneous Response Inventory

This technique was used to encourage the students to share their feelings in the group.

Students orally gave sentence endings to statements such as those below:

Examples:

1. I feel happy when \_\_\_\_\_
2. I feel sad when \_\_\_\_\_
3. I feel angry when \_\_\_\_\_
4. People like me when \_\_\_\_\_
5. A thing about me I'd like to change is \_\_\_\_\_
6. When I'm praised I \_\_\_\_\_
7. When I'm scolded I \_\_\_\_\_
8. When it's time for math I feel \_\_\_\_\_
9. I feel like yelling when \_\_\_\_\_
10. If I could be someone else I'd like to be \_\_\_\_\_

(Simon, Howe, and Kirschenbaum, 1972)

### Telephone Fantasy

This activity was used to encourage creative fantasy and to encourage the sharing of personal things in the group.

Everyone in the group closed his or her eyes and imagined having a telephone conversation with someone.

When the conversation was over they opened their eyes and shared their fantasies with the rest of the group or with partners (Boressoff, 1972)

### Touch Words

This activity was designed to increase the students' awareness of the sense of touch and to increase their vocabulary.

The author brought in a large number of objects for the students to touch and describe while wearing blindfolds.

### Verbal Dynamics

This activity was designed to build vocabulary while experiencing words with the body, and to increase body awareness.

The spoken word were combined with its implied movement. Some word lists used in the program were:

1 Sight Words: look, glance, glare, peep, peer, observe, gaze, stare, glower, glimpse, squint, scrutinize, ogle.

2 Household Activities: dust, sweep, scrub, scour, rinse, wipe, brush, polish, wring, shake, fill, scrape, Hoover.

3 Growing: pierce, shoot, lengthen, climb, reach, open, bloom, droop, ~~drop~~, shrivel, wither, die.

(Burniston and Bell, 1972; Cherry, 1971)

### What If You Were Blind?

This activity was introduced to increase the students' sensory awareness and to get them to appreciate what it is like to be blind. The activity was divided into several parts:

- 1 The students put on blindfolds and listened to all the sounds around them. They tried to hear sounds they had not noticed before (Boressoff, 1972).

- 2 The students put on a blindfold and tried to walk around the room with a stick or a long ruler.

- 3 The students described objects the way a blind person would describe them.

- 4 The students picked partners. One student was blindfolded and the other took him on a "touch walk" (Gunter, 1973).

#### What Is It?

These activities were used to increase the students' sensory awareness.

The students were blindfolded and given a number of items to identify by 1 smell, 2 taste, 3 touch, 4 sound (Lowndes, 1970; Witsen, 1967).

#### Where Is It?

The purpose of this activity was to increase sensory awareness.

The students were blindfolded and a number of sounds were produced. The students had to decide whether the sound was near or far, and what direction it was coming from

(Witsen, 1967).

## THE SESSIONS

During the program, the author kept a log of what happened in each session. The following are brief descriptions of each session:

### Session One

Session one was intended as an introduction to the program. The author had worked with the boys previously but this was the first time he had met the girls. He explained the purpose of the program, the time and number of weeks which would be spent in the program and the activities and format which would be used. The author used the activities, "Grandmother's Trunk", and "My name is .... and I want:...." as icebreakers and to learn the girls' names.

During this session, the participants were seated in a circle and for the most part were very quiet.

### Session Two

Session two was an introduction to sensory awareness. The author began with the activity, "Perceptual Memory Game" in order to demonstrate that there were many things which people saw but do not remember. The students were asked to name the five senses and a brief discussion of the five senses followed. This discussion ended with the students speculating on what it would be like if they were blind.

In order to introduce the activity, "What if you were blind", the author handed out a number of pamphlets from the Canadian National Institute for the Blind. He also passed around a magazine printed in braille. The students were then divided into three groups and each student was given a mask. With the masks on, they listened to sounds around them for five minutes. Each group then made a list of what they had heard.

The students, while wearing the masks, were then given a number of objects to describe. Many of them named the objects instead of describing them.

#### Sessions Three and Four

The author carried out the activity "Touch Words". The author brought in a large number of objects for the students to touch while they were wearing masks. Each object had a touch word, or words, associated with it; for example, chalk-brittle, egg-fragile, wood-splintery, soda cracker-crisp. The students were grouped into pairs and participated in a "Touch Walk". It was not particularly successful as the students who were more severely handicapped had difficulty in moving around the room while blindfolded.

The students seemed to enjoy the feel of various objects. They were obviously relaxed and were opening up.

#### Session Five

The author discussed how sound was produced by

objects vibrating. In response to a question, the author gave a simple explanation of how the ear worked. Then the students conducted a number of "Sound Experiments" in which they discovered that pitch depends on the length and the thickness of the vibrating object and that volume depends on the distance over which the vibrations travel. The author let each student hold and attempt to play a guitar. This was a new experience for most of the students and they enjoyed it very much.

#### Session Six

The author began with the activity "Screaming". The students were hesitant at first but soon joined in lustily. When it was over, there was a great deal of laughing and giggling. This put everyone in a good mood for the other sound activities which were tried that day.

A large number of activities were carried out in this session. They included "Bouncing Ball", "What is it?", "Where is it?", "Back to Back Conversations", "Interference", and "Animal Game".

#### Session Seven

This session was devoted to the sense of smell. About twenty-five substances with distinctive smells were placed in paper cups for the students to identify with their eyes closed. The substances included a variety of foods, household chemicals such as glue and alcohol, and perfumes and toilet water.



The author then outlined a number of uses of smell in the animal world. The students were told to close their eyes and the author brought a large Newfoundland dog into the room. It was a new experience for most of the students to pet and feed such a large dog.

#### Session Eight

This session was devoted to the sense of taste. The students were asked to identify the four tastes, which they did successfully. Then they were given examples of each taste: sweet-sugar, salty-salt, sour-vinegar, and bitter-unsweetened chocolate. Then a loaf of fresh bread was passed around and each student slowly chewed a piece taking note of the texture and taste. Finally, one of the teachers passed around some Chinese candy which had a very peculiar taste.

#### Session Nine

The group listened to a tape by Lazarus (undated) on relaxation training. At the end of the tape, the students and the teachers were obviously relaxed and a number of them were yawning.

#### Session Ten

The session began with relaxation exercises led by the author based on the tape used in the previous session. Then the group tried "Mirroring", a body awareness activity. This activity was difficult for a number of the students who

were not able to use one or both of their arms. The author then introduced a new set of exercises called "Verbal Dynamics". These exercises used movement to build vocabulary. In this session, the students acted out a number of "looking" words. The students found this exercise very interesting.

### Session Eleven

This session also began with relaxation exercises led by the author. The author then introduced two fantasy activities. These activities were "Telephone Fantasy" and "Getting In Trouble". The students were divided into pairs for these activities and shared their fantasies with their partners. The sessions ended with a number of verbal dynamics exercises. The students acted out "touching and holding" words; a sequence of words describing "growing" and words which described the movements of a snake.

### Session Twelve

This session was devoted to a number of new experiences for the students. A four month old baby was brought in and each of the students held him. This was very exciting for most, especially the girls. The students were then taken by bus and car to see icebergs and the waterfront.

### Session Thirteen

This session began with relaxation exercises, this time led by a student. Then the author introduced the activity, "Chain Story". One student began a story and

each person added something to it in turn. This exercise was probably the least successful activity of the project, as about half of the students could think of nothing to add to the story.

The students were then divided into three groups and introduced to "Brainstorming". The students were asked to brainstorm on creative uses for a ruler. A sample of their suggestions follows:

- to poke someone in the back
- to throw at somebody
- to use for a shovel
- to use for rowing a boat
- to stir a cup of tea
- to see if you need a shave
- to use as a bookmark
- to fire off caps
- to use as a windmill

#### Session Fourteen

The session began with relaxation exercises led by another student. The students then brainstormed to compile a list of opposite behaviors; for example, noisy-quiet, kind-unkind, and cry-laugh. The students then discussed appropriate situations for each behavior.

The author introduced a new series of exercises called "Forced Choice". The students suggested a list of things which they might take in a liferaft if they were in a ship that was sinking. The items suggested were: matches, clothes, a fishing rod, oars, a compass, water, food, and a life jacket. The students were divided into three groups and each group was asked to rank the items according to importance to survival. After a period of time, each

V76

group presented its list and each group defended its choices.

#### Session Fifteen

The session began with relaxation exercises led by one of the students. The students were then divided into three groups and brainstormed on the qualities of a good and a bad teacher. The students whispered as they made up their list as they did not want to be heard by a teacher. One group felt that "a good teacher did not talk too much about sex", but was very hesitant to put this in writing or say it aloud.

Each small group then suggested a list of occupations and ranked them from the most important to the least important. The author went from group to group encouraging students to express their views and to speak up when arguing their point of view. By the end of the discussion, they grew quite heated and some students who were normally quite reticent, were arguing loudly. When a consensus was reached in each of the three small groups, the students formed one large group to try to arrive at a common ranking. The discussion was very lively and, when the author left, it was still in progress, led by one of the teachers.

In this session, the author also tried to encourage the students to examine group process. After the brainstorming and the ranking, the students were asked a

number of questions, such as:

- 1 Who was the leader?
- 2 Who contributed the most?
- 3 Who was quiet and who was noisy?
- 4 Who got his own way?

### Session Sixteen

This session began as usual with relaxation exercises. Then the author tried the activity, "Discussion Games", which was moderately successful. The author led two activities intended to improve the students' awareness of non-verbal communication. In the first activity, the students covered their eyes while talking. Then they played the "Key Game", in which people attempt to send messages with their eyes. This was very successful.

In order to get the students to question their own moral values, the author gave the students a list of types of people. The students were to rank these from the least objectionable to most objectionable classmate. The list of people included:

- 1 Bother Bug. He constantly interrupts the class by talking to the teacher and bothering other children.
- 2 Back Talker. He talks back to his mother.
- 3 Cheater. He cheats in a game.
- 4 Litter Bug. He drops trash on the sidewalk.
- 5 Bully. He beats up a younger child.
- 6 Shoplifter. He steals candy from a store.
- 7 Ratter. He rats on a friend.

8 Chewer. He puts gum on the seat of a chair.

The results of this exercise are presented in Table 1.

Table 1

Students' Rankings of Eight Character  
Types from Least Objectionable to  
Most Objectionable

Rank	Group One	Group Two	Group Three
1	Cheater	Cheater	Shoplifter
2	Litterbug	Bother Bug	Bother Bug
3	Ratter	Chewer	Back Talker
4	Back Talker	Litterbug	Bully
5	Shoplifter	Ratter	Ratter
6	Chewer	Bully	Cheater
7	Bother Bug	Back Talker	Chewer
8	Bully	Shoplifter	Litterbug

Ranking: 1 = Least Objectionable  
8 = Most Objectionable

### Session Seventeen

The session began with relaxation exercises. Then the author led a verbal dynamics exercise on different ways to move.

In this session, the students were introduced to the concept of "Role Playing". For the rest of the session the students acted out situations based on things that made them angry, and how others treat handicapped people.

### Session Eighteen

To begin this session, the author led the students and teachers on a "body trip". The purpose of this activity was to increase body awareness and relaxation. Then the

group was led into an exploration of "personal space". One exercise had the participants holding conversations at distances varying from very far away to very close. In the other exercise, two people had a face to face conversation in which one person moved closer to the other person's face. The second person's reaction was to back away.

#### Session Nineteen

This entire session was spent filling out and sharing a "Spontaneous Response Inventory". The students seemed very open with their answers. The teachers also gave answers and this gave the students the opportunity to get to know them better.

#### Session Twenty

This session was short as its main purpose was an evaluation of the program. The students, the teachers and the author reviewed the entire program including which activities were most successful and which had been least successful. In this session, the students expressed regret that the program was over.

## Chapter 5.

### EVALUATION OF THE PROJECT

At the end of the project, an evaluation was carried out by the students, the teachers and the author. This chapter describes the results of the evaluation.

#### PROBLEMS IN EVALUATING THE PROGRAM

A number of factors imposed limitations on the methods which could be used to evaluate the program. The small number of subjects precluded an elaborate experimental design, as the results would have been unreliable. In addition, the small number of subjects made it impossible to sub-divide the group for purposes of comparison.

The fact that most of the group had cerebral palsy made the use of any standardized group test of questionable validity. Any test or method of evaluation which required reading or writing was ruled out, as the students varied greatly in these abilities.

The evaluation which was carried out was therefore subjective and based mainly on the teachers' and the author's observations. A standardized interview form, The Self-Image Questionnaire, used by Deschin (1970) (see Appendix A) was employed to arrive at some indication of whether there was any change in self-image as a result of



the program. The teachers' reactions were gathered by means of a questionnaire. (See Appendix B).

An evaluation of the project had to determine some answer to the four basic questions of the study. These are restated below:

1 Did the program meet some of the affective needs of the students (See Chapter 3, pp. 45-53)?

2 Which of the many activities in the program were most successful and which were least successful?

3 Would the teachers introduce the methods used in the program in their own teaching?

4 Would the philosophy of the school be changed to include affective education in the curriculum?

#### PROGRESS MADE BY STUDENTS IN THE PROGRAM

An individual assessment was made of each student's progress at the end of the program. The following specific observations were noted by the teachers and the author for each student:

##### Student A

He talked somewhat less and listened more at the end of the program. However, he missed about half of the sessions and so did not receive full benefit from the program.

##### Student B

She provided leadership in the group, as she was

always willing to try new things. However, because she always was a good participant in group situations, it is doubtful whether this leadership ability resulted from the program.

#### Student C

Although Student C seemed to enjoy the new experiences a great deal, there were few observed changes in his behavior. He remained reticent and withdrawn and did not learn to speak up or to express his feelings. However, he volunteered to join in a number of competitions during Sports Day, something he probably would not have done prior to the program.

#### Student D

One of the teacher's comments on Student D was, "Perhaps the greatest change here." Student D was previously very quiet in group situations. By the end of the program, she contributed confidently to discussions, spoke more loudly, and was more outgoing.

#### Student E

At the beginning, Student E was hesitant about expressing and defending her opinions. She seemed to gain some confidence in that area and at the end would defend her position in a discussion. She began to confide in one of the teachers about her feelings concerning living away from her family.

Student F

Student F had previously been observed to be quite shy and withdrawn from strangers. However, after the first few sessions, she was very much at ease with the author and the rest of the group. Although her outward behavior changed little, she seemed to be a much happier person during the program. The teachers observed that she smiled and laughed considerably more, but this may have been due to the fact that she disliked school but enjoyed the activities of the program.

Student G

This student was normally very reticent and withdrawn, but he surprised everyone by his leadership qualities in small group situations. He participated voluntarily in class a great deal more by the end of the program.

Student H

She was expected to dominate the group and to attempt to have her own way most of the time. However, during the program, she took her own turn and interacted well with everyone in the group.

Student I

No great change in behavior was observed in Student I. One teacher commented that she thought Student I had "acted immaturely in the group, as he talked and

giggled too much". Previously the teachers had seen Student I as a well adjusted, "happy-go-lucky" young boy. However during the program, he revealed to what degree his handicap affected him and how unhappy he was in situations with non-handicapped peers.

#### Student J

Little change was seen in Student J, although he is perhaps somewhat more willing to listen to others and to consider their opinions as worthwhile.

#### Student K

No change was observed in Student K. If anything he seemed to become more withdrawn and distant during the program.

In general, no great changes were observed in the students as a result of the program. However, there was a greater involvement by some students in group situations. A number of students have improved in listening. At least two of the students who were very quiet began to speak up and two of the students who were very loud, toned down somewhat. The teachers observed at several points during the program that the students were using the new words which had been introduced to them through sensory awareness activities and verbal dynamics. In summary, the program seemed to be of some benefit to about half of the students, and if continued longer, it may have made an important contribution to their lives.

## SELF-IMAGE QUESTIONNAIRE

As previously noted in the review of the literature, a physically handicapped person's self-image may depend on his previous experiences, his social skills, and his ability to communicate. Therefore, it might be expected that a program such as the one outlined in this report would have an effect on self-image.

Table 2

Scores on Pretest and Posttest  
of Self-Image Questionnaire.

Student	Pretest	Posttest	Direction of Change
A	1.7	2.3	+
B	2.7	2.7	0
C	2.7	2.3	-
D	2.7	2.7	0
E	2.3	2.7	+
F	2.0	2.3	+
G	1.7	2.7	+
H	2.3	3.3	+
I	2.7	2.7	0
J	3.3	3.3	0
K	3.7	3.0	-
Mean	2.5	2.7	+

In order to evaluate the effect of the program on self-image, a standardized interview developed by Deschin (1970) was administered before and after the program. The self-images as revealed by the students' responses, were then rated by three judges on a scale of 1 to 5: 1-very low,

2-low, 3-medium, 4-high, 5-very high. The numerical values assigned by the judges were then averaged to produce a self-image score for each interview. These scores are reproduced in Table 2.

Table 3  
Summary Data of Judges' Ratings of  
Self-Image Questionnaire

Judge	Intercorrelations			Mean	S.D
	A	B	C		
A	1.00	-.21	.34	3.00	.69
B		1.00	.09	2.27	.62
C			1.00	2.64	1.00

Table 3 summarizes the intercorrelations between the judges and gives the means and the standard deviations for each judge. These results show very low correlation and in one case, an inverse relationship between judges' ratings. In addition, there is substantial variability between the means and the standard deviation of the judges' ratings. Because of the unreliability of the judges' ratings further analysis of the data was not conducted.

#### TEACHERS' REACTIONS TO THE PROGRAM

The two teachers involved, reacted very favorably to the program. A comment made by one of the teachers was,

"Excellent program, well planned and carried out." The other teacher was equally enthusiastic about the program.

Both teachers indicated that they would use many of the techniques introduced in the program in the school during the following year. In addition, both teachers used some of the techniques in their classes while the program was in progress. The principal indicated that she would encourage the other teacher in the school who was not involved in the program to use similar methods with the younger children.

The major criticism of the program was that it was too concentrated, that there was "too much spread over too little time". It was also felt that this type of program might have been more successful with younger children.

There was some indication that the program might have had some lasting effect on the curriculum of the school. The principal wrote the following unsolicited comments in her annual report:

I would like to mention the work of [the author].... whom you may have heard about from your children. Before Christmas he had several group sessions with the older boys, and more latterly has been running a "communications" programme with all the older students. This has involved helping them to be more aware of themselves first, then of others, finding the words to describe different experiences and then making decisions involving judgements. They improved very much in their ability to express themselves. It showed us the need to talk with our children more, and also to show them, positively, the values and attitudes we believe in and that we have feelings too.

## REACTIONS TO INDIVIDUAL ACTIVITIES

Both the students and the teachers indicated to the author which activities they felt were most useful and most stimulating and which were least useful and stimulating.

This seemed to be a difficult task for the students initially, as their first reaction was that they "liked all of the activities." Although there were individual differences, it was generally agreed after some discussion that the most successful activities were "Relaxation",

"Brainstorming", "Forced Choice", and "Role Playing". But as one teacher pointed out, these were only successful

because of the preliminary work in sensory awareness and self-expression. The least successful activities were

"Chain Story", and the verbal dynamics exercise, "Snakes".

The latter activity posed problems in that a number of the students could not carry out the movements due to their handicap. This demonstrates the need for great care in selecting appropriate activities for handicapped children.

## OTHER OBSERVATIONS

The results of the values clarification exercise in session sixteen (see Table 1, p.78) surprised both the teachers and the author. It seemed almost shocking to the teachers and the author that the students would find shoplifting and cheating less objectionable than littering



and putting gum on someone's chair. However, as previously noted in the review of the literature, handicapped children rarely have opportunities for making moral decisions. This lack of practise in moral decisions might explain the results of the values clarification exercise.

Another observation which was not related to the original purposes of the program was that the students were very unrealistic in their goals for the future. The Self-Image Questionnaire contained two questions related to the student's future: 1 What would you most like to be when you grow up? and 2 How far would you like to go in school? When the students' answers to these questions were compared with their grade and age at the time of the study, it was apparent that the students were very unrealistic about their future. The comparisons between academic and vocational goals and the students' status at the time of the study are presented in Table 4.

Most of the students in the present study will be leaving the school within the next three to six years. Even if the students progressed at the rate of one grade per year, which was not the case at the time of the project, they would fall far short of reaching their academic goals by the time they leave school. This would also be true of most of their vocational goals. The author realizes that it is beneficial to have goals for the future but contends that there may be problems if those goals are highly unrealistic. Peacey (1966) also agreed with this point of view.

Table 4

A Comparison of Students' Ages and  
Academic Standings with Their  
Academic and Vocational  
Goals

Student	Age	Grade Level	Academic Goal	Vocational Goal
A	17	Math-Grade 5 Reading- Grade 3	Grade 11 & University	Electronics or Bookkeeping
B	14	Grade 4	Grade 10	Teacher
C	15	Math-Grade 6 Reading- Grade 8	Grade 11	Did not know
D	14	Math-Grade 1 Cannot read	Grade 11	Nurse
E	15	Grade 4	"Until I get my education"	Secretary
F	14	Math-Grade 2 Reading- Grade 4	Grade 11	Secretary
G	12	Grade 4	Grade 11	Office Worker
H	13	Math-Grade 2 Reading- Grade 1	Grade 11	Nurse
I	12	Grade 4	Grade 11 & University	"Work with kids"
J	14	Grade 4	Grade 10	"Cop"
K	14	Grade 4	Grade 11	Fireman or Farmer

A number of factors will likely influence the future of the students of the school. Based on the observations of the author, it would appear that:

1. The students will probably not have sufficient educational qualifications to enable them to continue at most post-secondary institutions after they leave the school.

2. The students will face the prejudices of employers against hiring the physically handicapped. Barker et al. (1953) listed eighteen reasons employers commonly give for not hiring the physically handicapped.

3. The students will have had little experience of independent living. Peacey (1966) noted that it was not uncommon to find cerebral palsied school-leavers "who have never worked out for themselves a bus or train journey, or perhaps even made decisions about their own clothes (p.110)."

4. There are few opportunities in this province for the students to work in a sheltered workshop or other type of special environment for the physically handicapped.

5. Given these factors and their level of aspirations, the students may be faced with a life style which is much below their expectations after they leave school.

These are just some of the problems, which will soon have to be faced by those who are working with these students.

#### SUMMARY

The evaluation indicated that the program had some

benefit for the students at the school. The program was probably most beneficial for the teachers in that it gave them new ideas and methods to use in their classes. The evaluation also indicated some other areas of concern not directly related to this study, such as values and vocational goals, which need to be dealt with in the future.

## Chapter 6

### CONCLUSIONS AND RECOMMENDATIONS

This project report has examined many aspects of the psychosocial needs of cerebral palsied children. A number of conclusions and recommendations can be drawn from the literature and from the author's experiences during the program conducted at the school.

### CONCLUSIONS

First, it has been demonstrated that students with a physical handicap such as cerebral palsy lack many of the experiences and opportunities which "normal" children have. Basically, three factors militate against a normal life for the cerebral palsied child. One is the disability itself, in which greatly reduced mobility prevents the child's exploration of his environment. Another factor is the overprotection or rejection by parents frequently experienced by the cerebral palsied child. Often, this prevents the child from having even those experiences of which he is physically capable. Finally, the reactions of other people to the physically handicapped usually result in considerable social isolation for the child. In addition, these reactions occasionally cause the parents to be embarrassed by the handicapped child, and this discourages them from taking

their child out into the community. As a result of these factors, students with cerebral palsy have had little experience or opportunity to practise such things as sensory awareness, social skills, communication skills, moral judgment and self-expression.

The literature concerning the psychosocial needs of cerebral palsied children continuously stressed the benefit of affective education in dealing with these deficiencies. It is generally felt that a continued program of this type can be of great value when begun early enough. Such a program should ideally be instituted as a part of the regular academic curriculum. Such integration would enhance the effectiveness of the activities and, through increased relevance, make the academic subjects more meaningful.

It has also been demonstrated that many physically handicapped children do not possess even a rudimentary view of moral values. Lack of experience in making moral judgments is presumably the cause of this.

At present, there is very little academic or vocational counselling available to the physically handicapped in this province. This has often resulted in an unrealistic view of academic and vocational goals attainable by the student.

Furthermore, parents can play a major role in aiding the handicapped child to adjust to his disability. It is felt that parents could accomplish a great deal in this

regard if they were aware of the impact they could have and if ways and means of accomplishing this were demonstrated to them.

In addition, many of the problems and deficiencies mentioned could at least be partially overcome if the affective aspect of education was stressed more highly than is the case at present.

### RECOMMENDATIONS

Based on the conclusions presented above, the author would make the following recommendations.

First, the author feels that continuation and expansion of sensory and communication activities for the physically handicapped should be mandatory. An attempt must be made to assist the older student in compensating for years of inexperience in relating to his environment. Furthermore, to avoid such deprivation with future students, a program of this nature should be started with the young children. Such a program should provide a vast number of new and different experiences. This goal was partially reached by the school in the past year, as a bus was provided to transport the students to a variety of locations. It is to be hoped that the use of this bus could be further expanded in the future.

A qualified counselor is needed to deal with the many problems experienced by physically handicapped children. Such a counselor would be of great benefit in dealing with

the personal, academic, and vocational problems of the students. In addition, some form of liason between school and home is required. It would be hoped that a counselor could assist parents in realizing that they have a vital role to play in the adjustment and emotional and academic growth of their children.

Finally, it is recommended that additional programs and/or studies be carried out as follows:

- 1 The long term benefits of sensory awareness and body awareness training with young cerebral palsied children should be investigated.
- 2 A program of moral education should be instituted and its impact should be assessed.
- 3 A program of vocational counselling should be set up and evaluated.
- 4 Ways of integrating the physically handicapped students at the school with their non-handicapped peers should be explored and implemented where possible.



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## Appendix A

SELF-IMAGE QUESTIONNAIRE

1. If you had three wishes, what would you ask for?
2. Who would you most want to be like?
3. What would you most like to be when you grow up?
4. What two things do you like most about yourself?
5. What two things do you like least about yourself?
6. How far would you like to go in school? Why?

Sentence Completions

- a. Most of all, I want to \_\_\_\_\_.
- b. I would like to forget the time I \_\_\_\_\_.
- c. If people would only \_\_\_\_\_.
- d. I know I could do anything if \_\_\_\_\_.
- e. I could be happy if \_\_\_\_\_.
- f. Other school children \_\_\_\_\_.
- g. People who have trouble walking \_\_\_\_\_.
- h. If I weren't held back by \_\_\_\_\_.
- i. I am worried about \_\_\_\_\_.
- j. No matter how hard I try, I \_\_\_\_\_.
- k. I like to be treated \_\_\_\_\_.

## Appendix B

## QUESTIONNAIRE FOR TEACHERS

1. What is your overall evaluation of the program?
2. Which activities would you judge to be the most useful?
3. Which activities would you judge to be the least useful?
4. What general changes did you observe in the students during the time the program was in progress?
5. What specific changes did you observe in each student during the time the program was in progress?
6. Do you plan to use any of the activities in the school program next year? Specify the activities.
7. Do you have any additional observations or comments on the program?





